

APPARATUS AND METHOD FOR REAL TIME  
THREE-DIMENSIONAL ULTRASOUND IMAGING

ABSTRACT OF THE DISCLOSURE

The present invention is directed to ultrasound systems for three-dimensional ultrasound imaging data in real time. In one embodiment, the system includes a processing system coupled to an ultrasound scan head 40 that includes an ultrasound transducer array 30 coupled to a positional actuator 32 having a driven member that rotates about a first axis to pivot the array about a second axis substantially perpendicular to the first axis. In another embodiment, an ultrasound scan head 40 includes a positional actuator 42 rotatable about a first axis and coupled to a pivot member that supports an array that rotates about a second rotational axis substantially perpendicular to the first axis. In yet another embodiment, a method for three-dimensional imaging includes controlling the rotation of a driven member over a predetermined rotational pattern to provide approximately constant rotation of the array; and acquiring ultrasound data along a plurality of mutually spaced-apart scan lines.